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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/853,690	05/14/2001	Anthony Beverina	8594-002-64 DIV	7108

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Supervisor, Patent Prosecution Services  
PIPER MARBURY RUDNICK & WOLFE LLP  
1200 Nineteenth Street, N.W.  
Washington, DC 20036-2412

EXAMINER

FERRIS III, FRED O

ART UNIT PAPER NUMBER

2128

DATE MAILED: 09/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/853,690

**Applicant(s)**

BEVERINA ET AL.

**Examiner**

Fred Ferris

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 14 May 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 13-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 13-32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 May 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 5/14/01.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### DETAILED ACTION

1. *Claims 1-41 have been presented for examination based on applicant's preliminary amendment filed 14 May 2001. Applicant's preliminary amendment has cancelled claims 1-12 and 33-41. Claims 13-32 are currently pending in this application and have been rejected by the examiner.*

### **Drawings**

2. *The drawings are objected to because certain words appear to be misspelled. For example, in Figure 53 the word "interpreting" is misspelled as "interpretting", and in Figure 32 the word "next" is misspelled as "nest".*

*Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner,*

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*the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.*

### ***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

**3. Claims 13-32 are rejected under 35 U.S.C. 101 because the claimed invention is drawn to non-statutory subject matter.**

*The Examiner submits that method of claim 13, as written, are merely drawn to a mental process for assessing the risk based on probability and vulnerability because the language of the claims can be interpreted as meaning that the method is carried out by a mental process augmented (calculated) using pencil and paper. (i.e. not a machine or computer process) See Figure*

**MPEP 2111 [R-1] recites the following:**

**"2111 [R-1] Claim Interpretation; Broadest Reasonable Interpretation  
CLAIMS MUST BE GIVEN THEIR BROADEST REASONABLE  
INTERPRETATION**

*During patent examination, the pending claims must be "given their broadest reasonable interpretation consistent with the specification." In re Hyatt, 211 F.3d 1367, 1372, 54 USPQ2d 1664, 1667 (Fed. Cir. 2000).< Applicant always has the opportunity to amend the claims during prosecution, and broad interpretation by the examiner reduces the possibility that the claim, once issued, will be interpreted more broadly than is justified. In re Prater, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550-51 (CCPA 1969) (Claim 9 was directed to a process of analyzing data generated by mass spectrographic analysis of a gas. The process comprised selecting the data to be analyzed by subjecting the data to a mathematical manipulation. The examiner made rejections under 35 U.S.C. 101 and 102. In the 35 U.S.C. 102 rejection, the examiner explained that the claim was anticipated by a mental process augmented by pencil and paper markings. The court agreed that the claim was not limited to using a machine to carry out the process since the claim did not explicitly set forth the machine. The court explained that "reading a claim in light of the specification, to thereby interpret limitations explicitly recited in the claim, is a quite different thing from reading limitations of the specification into a claim," to thereby narrow the scope of the claim by implicitly adding*

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*disclosed limitations which have no express basis in the claim." The court found that applicant was advocating the latter, i.e., the impermissible importation of subject matter from the specification into the claim.). See also In re Morris, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027-28 (Fed. Cir. 1997) (The court held that the PTO is not required, in the course of prosecution, to interpret claims in applications in the same manner as a court would interpret claims in an infringement suit. Rather, the "PTO applies to verbiage of the proposed claims the broadest reasonable meaning of the words in their ordinary usage as they would be understood by one of ordinary skill in the art, taking into account whatever enlightenment by way of definitions or otherwise that may be afforded by the written description contained in applicant's specification.")"*

*The Examiner further submits that, in view of the language of the claims, Applicant's have merely claimed a manipulation of abstract ideas by a mental process and have not specifically set forth a machine or computer process for assessing the risk of a terrorist attack. Dependent claims 14-32 inherit the defects of the claims from which they depend.*

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**4. Claims 13 - 15, 22, and 32 are rejected under 35 U.S.C. 102(b) as being anticipated by "Applications of Quantitative Modeling to Knowledge-Based Risk Assessment Studies", Biswas et al, ACM 0-89791-320-5/89/0006/0092, ACM 1989.**

*Claim 13 broadly claims the following elements:*

Method for assessing risk by:

*- Calculating a probability that an event will occur*

- Calculating vulnerability to the event
- Calculating risk based on probability and vulnerability  
where calculating steps use an Artificial Intelligence (AI) Network

Regarding independent claim 13: Biswas et al first sets forth that it is well established that assessing risk based on the probability that an unwanted or hazardous event will occur (for (i) possible events) is given by the formula:

$$\text{Risk} = \sum_i (\text{probability of event})_i \times (\text{consequence of event})_i$$

Hence, Biswas et al clearly anticipates the claimed limitations relating to assessing risk by calculating a probability that an event will occur. Applicant's specification (page 1, line 8) indicates that "Risk can be defined as probability\*vulnerability" where vulnerability is simply the "susceptibility to the event multiplied by the consequences associated with that event". Biswas sets forth the consequences associated with an event as noted above. The specification further indicates that the calculation of susceptibility, and hence "vulnerability", is simply based on input from experts in the field (i.e. weighted based on expert knowledge). See specification, page 5, lines 14-21. That is, the "susceptibility" is simply based on the subjective judgements of human experts, and would therefore be inherent in the well-known knowledge-based (expert) AI techniques as disclosed by Biswas in Section 4. ". (Also see: sections 2-5.3) Biswas et al therefore anticipates the limitations relating to calculating risk based on probability and vulnerability, because these knowledge based AI techniques include calculating risk based on event probability, and consequences which inherently include the "vulnerability" as assessed by experts in the field. (page 94, paragraphs 1-4, page 95, paragraphs 1-5, page 93, paragraphs 5-7, Fig. 1) Biswas et al

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*further teaches the use of AI networks (i.e. event trees, nodes, layers) in calculating risk based on probability and vulnerability (inherent) as noted above. (Especially sections 5.0-5.3)*

*Per dependent claims 14, 15, 22, and 32: Biswas et al further teaches Bayesian networks (page 94, paragraph 7, Section 5.3), environmental risk (Section 2), and project risk (Sections 1-2). Biswas et al further anticipates the limitations of claim 15 relating to vulnerability and susceptibility as noted above (sections 2-5.3).*

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

*This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).*

**5. Claims 16-18, 27, 28, 30 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over “Applications of Quantitative Modeling to Knowledge-Based Risk Assessment Studies”, Biswas et al, ACM 0-89791-320-5/89/0006/0092, ACM 1989 in view of “Installation Force Protection Guide”, United States Air Force, 1997. (Hereafter, IFPG)**

*As previously cited above Biswas et al renders obvious the elements of independent claim 13 relating to assessing risk based on probability and vulnerability.*

*Biswas does not explicitly disclose assessing the risk of terrorist attack, infrastructure attack, military action, building security, or the susceptibility based on access to a physical environment model.*

*Per claims 16 and 17: IFPG teaches strategies for risk reduction through protection, planning, construction, and design inclusive of vulnerability assessment (section C, page 9) that includes the susceptibility to attack from a terrorist threat (section B, part 2, page 8).*

*Per claims 18, 27, and 31: IFPG further discloses strategies for risk reduction through protection, planning, construction, and design inclusive an attack against an infrastructure (Chapter 3), military action (Chapter 2), and building security (Chapters 3-5).*

*Per claims 28 and 30: IFPG further discloses strategies for risk reduction through protection, planning, construction, and design including consideration of injury to personnel (Chapters 1-3). Obviously, the strategies related to building security noted above can also be applied to home security (Chapters 3-5).*



*It would have been obvious to one having ordinary skill in the art at the time the claimed invention was made to modify the teachings of Biswas relating to assessing risk based on probability and vulnerability, with the teachings of IFPG relating to strategies for protection, planning, construction, and design in reducing risk from a terrorist attack threat, to realize the elements of the claimed invention. An obvious motivation exists since the Biswas et al reference teaches that AI knowledge-based techniques can be applied to the risk analysis of any undesirable or hazardous event. (See: Biswas, Sections 1, 2). Further, the level of skill required by an artisan to realize the claimed limitations of the present invention is clearly established by both references. (See: Biswas/IFPG, Abstract) Accordingly, a skilled artisan tasked with realizing a method for calculating relative risk of an undesirable event based probability and vulnerability drawn to a terrorist threat, and having access to the teachings of Biswas and IFPG, would have knowingly modified the teachings of Biswas with the teachings of IFPG to realize the claimed elements of the present invention while reducing the cost and development time.*

**6. Claims 19-21, 28, and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over “Applications of Quantitative Modeling to Knowledge-Based Risk Assessment Studies”, Biswas et al, ACM 0-89791-320-5/89/0006/0092, ACM 1989 in view of “The Strategic use of Expert Systems for Risk Management in the Insurance Industry”, Meyer et al, ACM 089791-416-3, ACM 1990.**

*As previously cited above Biswas et al renders obvious the elements of independent claim 13 relating to assessing risk based on probability and vulnerability.*

*Biswas does not explicitly disclose assessing the risk based on financial or insurance loss, property theft, injury or criminal activity.*

*Meyer et al teaches assessing the risk associated with financial, insurance, and property loss inclusive of injury, loss of life, and associated environmental factors. (pages 554-557) Obviously, property loss would include personal information loss (i.e. identity theft) resulting from criminal activity.*

*It would have been obvious to one having ordinary skill in the art at the time the claimed invention was made to modify the teachings of Biswas relating to assessing risk based on probability and vulnerability, with the teachings of MEYER relating to the risk associated with financial, insurance, and property loss, to realize the elements of the claimed invention. An obvious motivation exists since the Biswas et al reference teaches that AI knowledge-based techniques can be applied to the risk analysis of any undesirable or hazardous event. (See: Biswas, Sections 1, 2). Further, the level of skill required by an artisan to realize the claimed limitations of the present invention is clearly established by both references. (See: Biswas/MEYER, Abstract) Accordingly, a skilled artisan tasked with realizing a method for calculating relative risk of an undesirable event based probability and vulnerability drawn to a terrorist threat, and having access to the teachings of Biswas and MEYER, would have knowingly modified the teachings of Biswas with the teachings of MEYER to realize the claimed elements of the present invention while reducing the cost and development time.*

**7. Claim 24 and 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over “Applications of Quantitative Modeling to Knowledge-Based Risk Assessment Studies”, Biswas et al, ACM 0-89791-320-5/89/0006/0092, ACM 1989 in view of “Airport Vulnerability Assessment – An Analytical Approach”, Lazarick, IEEE 0-7803-4535-5/98, IEEE 1998**

*As previously cited above Biswas et al renders obvious the elements of independent claim 13 relating to assessing risk based on probability and vulnerability.*

*Biswas does not explicitly disclose assessing the risk associated with air travel.*

*Per claims 24 and 25: Lazarick teaches assessing the risks associated with air travel (pages 40, 41, Fig.). The examiner also notes that such techniques can obviously be applied to assessing the risk associated with highway and rail systems.*

*It would have been obvious to one having ordinary skill in the art at the time the claimed invention was made to modify the teachings of Biswas relating to assessing risk based on probability and vulnerability, with the teachings of LAZARICK relating to the risk associated with air (and ground) travel, to realize the elements of the claimed invention. An obvious motivation exists since the Biswas et al reference teaches that AI knowledge-based techniques can be applied to the risk analysis of any undesirable or hazardous event. (See: Biswas, Sections 1, 2). Further, the level of skill required by an artisan to realize the claimed limitations of the present invention is clearly established by both references. (See: Biswas/LAZARICK, Abstract) Accordingly, a skilled artisan tasked with realizing a method for calculating relative risk of an undesirable event based*

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*probability and vulnerability drawn to a terrorist threat, and having access to the teachings of Biswas and LAZARICK, would have knowingly modified the teachings of Biswas with the teachings of LAZARICK to realize the claimed elements of the present invention while reducing the cost and development time.*

**8. Claims 23 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over “Applications of Quantitative Modeling to Knowledge-Based Risk Assessment Studies”, Biswas et al, ACM 0-89791-320-5/89/0006/0092, ACM 1989 in view of “Hazard Analysis of Commercial Space Transportation” Federal Aviation Administration, Executive Summary, pages 9-1 through 9-27, October 1995 (Hereafter, FAA)**

*As previously cited above Biswas et al renders obvious the elements of independent claim 13 relating to assessing risk based on probability and vulnerability.*

*Biswas does not explicitly disclose assessing the risk associated with space travel.*

*Per claims 23 and 26: FAA teaches assessing the risks associated with manned and unmanned space travel (First page, Volume III, Section 9.1.4).*

*It would have been obvious to one having ordinary skill in the art at the time the claimed invention was made to modify the teachings of Biswas relating to assessing risk based on probability and vulnerability, with the teachings of FAA relating to the risk associated with space travel, to realize the elements of the claimed invention. An obvious motivation exists since the Biswas et al reference teaches that AI knowledge-*

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*based techniques can be applied to the risk analysis of any undesirable or hazardous event. (See: Biswas, Sections 1, 2). Further, the level of skill required by an artisan to realize the claimed limitations of the present invention is clearly established by both references. (See: Biswas/FAA, Abstract) Accordingly, a skilled artisan tasked with realizing a method for calculating relative risk of an undesirable event based probability and vulnerability drawn to a terrorist threat, and having access to the teachings of Biswas and FAA, would have knowingly modified the teachings of Biswas with the teachings of FAA to realize the claimed elements of the present invention while reducing the cost and development time.*

### **Conclusion**

9. *The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.*

*"Blast Vulnerability of Building Structures and the Public from Terrorist Attack", Johnson et al, Proceedings of 1994 International Carnahan Conference on Security Technology", IEEE 1994 teaches building vulnerability and risk analysis.*

*"Air Force Instruction 31-210, Secretary of the Air Force, 1 August 1999 teaches Antiterrorism Protection program standards.*

*Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fred Ferris whose telephone number is 571-272-3778 and whose normal working hours are 8:30am to 5:00pm Monday to Friday. Any inquiry*

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*of a general nature relating to the status of this application should be directed to the group receptionist whose telephone number is 571-272-3700. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jean Homere can be reached at 571-272-3780. The Official Fax Number is: (703) 872-9306*

*Fred Ferris*, Patent Examiner  
Simulation and Emulation, Art Unit 2128  
U.S. Patent and Trademark Office  
Randolph Building, Room 5D19  
401 Dulany Street  
Alexandria, VA 22313  
Phone: (571-272-3778)  
Fred.Ferris@uspto.gov  
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